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ABSTRACT

"Verbal" and "nonverbal" are confused and confusing terms. Gestural phenomena in semiotic use--gSigns--are called nonverbal but work in three major ways, only the first of which is unrelated to the highly encoded (verbal) activity called language. A gSign may: (1) have a general meaning: "yes," "no," "who cares"; (2) be a code substitute for a language element; (3) be part of the direct expression of an inner language structure. The first of these is generally understood as "gesture". The second operates on three levels: (a) A gSign stands for an alphabetic symbol in a fingerspelling code; (b) gSigns encode content words of a language or languages; and (c) gSigns encode content words, function words, and inflectional and derivational affixes of some languages. But language structure itself is nonverbal, if it consists of relationships of units to features, of syntactic domination, and of semantic hierarchies, and if "verbal" refers to the expression of these vocally. Language and its expression are not identical; 999 express it in speech but one in 1,000 in gSigns. "Gesticulation and speech are two outputs of one utterance" (Kendon 1975). Deaf signers use gSigns as speakers use language sounds. Thus gSigns are not "nonverbal" but prelinguistic or fully linguistic behavior. (Author/DB)

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GESTURAL SIGNS IN CODES AND LANGUAGES: REDEFINING NONVERBAL

William C. Stokoe

The use of gestural signs. Having been engaged in sign language study since 1955, I am appalled by the increasingly visible extent of my ignorance. If what seems perfectly clear to me now should be considered twenty years hence, I fear that the contribution I may make to this year's Conference on Applied Linguistics[1] may appear less than illuminating. But this may simply reflect the human condition; so I am encouraged to describe what I see now, not so much because I think it describes reality as because it may encourage or irritate others into taking a closer look.

The simplest view of gestural signs (which I shall call gSigns to save time) shows them as Peirce saw, triadic (Greenlee 1973). They can have various relations to each other, to what they signify, and to the intelligence of their user. A gSign is then used in at least these three interesting ways: as a sign for a general meaning, which might be verbalized as 'yes' or 'no' or 'I don't know'; as a code substitute for some part of a language utterance; and as the direct, primary, and immediate expression (i.e. symbolization, realization, output, or signal mode) of a language structure.

The first of these three comes closest perhaps to the salient meaning of the term gesture in common use, and the study of this use is being carried on in most interesting fashion by many behavioral scientists. I am uncomfortable, however, with the use of the term nonverbal to characterize this study and its material.

The second way of using gSigns closely fits one meaning of the term code. It has a long history and consequently many names--chironomia, dactylology, manual alphabetics, fingerspelling, as well as sign language, mimic language sign talk, talking (on the) hands.... But the profusion of names should not be allowed to confuse the clear distinctions in three main kinds of such codes' use.

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In the first kind of use of this code, one manual sign, gesture, or presentation is by agreement associated with one alphabetic symbol. The gSign in such codes may involve one hand, both hands, or the hands and other elements (Stokoe 1975). Second, the gSign in another kind of code is agreed to represent a word and its meaning. The precise definition of word and of meaning in this context is not important--the users of this kind of gSign code were traditionally so busily trading furs or hides for knives and whisky that they could hardly care less about linguistic or semiotic niceties. In this class of course belong the famous American Indian Sign Languages as well as most of the gSign interaction between hearing persons and their deaf pupils, clients, dependents, or wards. This kind of gSign code, usually called sign language, presupposes another language or languages; e.g. English or several Indian languages. In it a sign stands for a word of that presupposed, pre-existing, and pre-eminent language--or for a two word phrase; e.g. one sign in PISL stands for 'white man'. Content words are what the gSigns in this kind of code represent: consequently, the grammar of the gSign utterance, especially when translated back into words, looks quaint, incorrect, or in need of improvement or explanation. This of course depends on whether the observer is watching a western movie, is an oralist teacher of the deaf, or has some linguistic sophistication.

The third kind of code substituting gSigns for pre-existing language elements is both new and old. It is always a conscious, deliberately invented code. It has a number of current inventors putting precisely prescribed and performed gSigns and particular language elements into fast association (and in promoting its use with the argument that its use with or to deaf children will make them automatically competent in the language whose elements it encodes; however, Fenn in a recent study finds this claim unproven).

This deliberately invented code differs from others precisely in its formality. Both by specifying the one and only word which the gSign is to represent and by using signs to represent not just the content words but also the function words and grammatical particles, it emphasizes formalism; e.g. in one such code the signs for either, or, whether are distinguished by a different configuration of the moving hand, but the non-moving hand and the movement remain the same. The result is interesting to a linguist: the three signs compose a form-meaning class analogous not to gor / gol / gosh (Wescott 1974) but to blick / tnick / fnick; i.e. none of them is ~~a used or possible sign in a natural sign language even though two of the three ALS phonemes that compose~~ them (Battison 1974) are ~~authentic~~.

an actual or possible sign in a natural sign language, even though two of the three or four sign phonemes (Battison 1974) that compose them are authentic. The formalism in this kind of code also disturbs when one gSign is used for more than one inflectional or derivational morpheme, as is done if the morphemes have the same sound and spelling. Thus both plural and non-past verb suffix have the same sign as does the adverb forming suffix of nicely and the adjective forming suffix of friendly.

In the present context, however, the severest charge against the inventors and promoters of formalistic gSign codes must be that they attempt to encode English--which is by their own definition a verbal system--by material they treat as nonverbal.

The relationship between one verbal system and another verbal system, when both present the same idea structure, may remain a mystery, but its name is translation. When, however, a system that is by definition less highly encoded, i.e. nonverbal, is used to re-encode material first symbolized in language, the relation of sign to signified must be arbitrarily determined. To gain a one-to-one relationship of sign and signified some features of the pre-existing language system must be sacrificed. This holds even when a writing system encodes the vocal output of spoken language. Graphic and phonological systems, no matter how well paired originally, grow apart in use; but even the most transparent graphic code for speech omits much of the vocal signal. When a code at the next remove, e.g. morse or fingerspelling codes, represents graphic symbols, the correspondence of sign to signified can be kept very close but at what may be a disastrous cost in time as Lieberman (1975) points out.

The analogy is tempting to the code maker: if the fist with the thumb across the folded fingers represents 's', why not use gSigns with movement and locational distinctions added to configurational to represent not letters or general concepts but morphemes?

The answer is to be found in the third major use of gSigns--not as gestures with culturally determined or universal ideational or emotional content and not as code substitutes for elements of a pre-existent language utterance but as the direct symbolization of language structures.

Language structures are of course nonverbal. Mathematical reality, as White made clear a generation ago (1947), resides not in the external world nor in the human nervous system but in culture. Language structure, pace White, cannot be so precisely located.

Its primary manifestations are of course in the external world, as they must be to be perceptible to one or more senses. Its structure generation must be a function of the human nervous system. But language would be unthinkable and inexpressible if it were not for culture. Indeed, that truism is reversible: culture requires language as much as language requires culture.

The point of this whole theoretical excursion is that language structures are brain functioning; their expression may be vocal OR gestural. We can specify further that about nine hundred and ninety-nine of the human species use vocal expression for each one who uses direct gestural expression of the kind expressed in American Sign Language. Although the language functioning of one tenth of one percent of the population may have small statistical significance, a great deal of published and continuing research since 1955 has shown one way after another in which gSign expression of language structures qualifies in every way to be termed linguistic, phonological, highly encoded, or--and from here on I abjure the term--verbal.

There will not be time to review twenty years of scholarship. Nine issues of the now quarterly journal SIGN LANGUAGE STUDIES, articles in the two most recent issues of LANGUAGE, a half-dozen books, and scores of scattered articles and papers document the claim that American Sign Language on the one hand has its own phonological (Battison 1974), its own syntactical (Woodward passim, Fischer 1973), and its own semantic (Stokoe 1972, Friedman 1975) systems, and on the other hand, does not in any substantial way re-encode English.

Nevertheless, pursuit of the one when nine hundred and ninety-nine are accomodated elsewhere may still be quixotic and can hardly account for the universal interest gSigns and their use seem to attract. Recent studies by Kendon (1976) help to explain the paradox. Kendon finds not that one in one thousand (the prelingually deaf) use gSigns as a direct expression of their language structures, but that all speakers do.

His evidence comes from micro-analysis of gesticulation that co-occurs with speech. It shows, first, that gSign and vocal activity are similarly structured in units, groups, and clusters; second, that both express the same content--as he puts it, "one utterance with two outputs"; and third, that interruption, hesitation, and other disturbances to the vocal output less affect the gSign output. He concludes

from this that a gestural output cannot have been added as a later ancillary or adjunct to vocal expression. Vocal encoding being slower and more susceptible to interruption than gestural, it follows that language as idea structures and their relations (perhaps deep syntactical structures) must be a cognitive or brain or nervous system function.

The problem, then, with the terms nonverbal and verbal in most current usage is that they completely obscure the important relationships. If verbal means 'pertaining to language' as well as 'vocally expressed', and if nonverbal means 'pertaining to communication systems not language-based or related to language' then it is time to stop using the terms.

Language being brain function at base, the use of the adjective verbal with the noun language is redundant at best and may be symptomatic of utter confusion. Then, since language can be directly expressed by gestural activity--both in a central channel as by the deaf and in a two-channel as in gesticulating speakers--the term nonverbal applied to the language of the deaf or to a speaker's gesticulation is a misnomer.

Certain gestural activity, such as that of captive chimpanzees and of most human infants may with justice be termed prelinguistic, but not nonverbal. Whether the gSigns used by Washoe and now many other chimpanzees are taken as fully language expressions will remain an ideological debate (see Abbott 1975), but there must be at least agreement that the human communicative partners of these animals are using gSigns as code substitutes for language and so hardly as nonverbal activity.

The case of human infants is somewhat different. Just as Kendon has found gesticulation a parallel and most probably prior expression of language structures, Bullowa (1976) has shown the very young infant in proto-conversation, i.e. co-ordinating its body movements and eye direction with maternal speech and gesticulation. This suggests that reception as well as transmission of language structures involves more than ear and mouth.

Another kind of observation makes even clearer that excluding phenomena as non-pertinent to a discipline, i.e. nonverbal, vitiates the attempt to explain communicative behavior and where it came from. All infants learn to communicate with those around them by observing others' actions and by controlling their own musculature, especially of the face and upper body. But deaf, and hearing, infants in a household of signers (and now we are considering not 0.001 but 0.0001 of

the population) rapidly develop this prelinguistic behavior common to our species and the whole primate order into a fully linguistic transmission and reception system. The observations made of this special group of language acquirers confirm the findings of Kendon: gestural expression of language structures in such unusual ontogeny is also earlier to emerge. The two-word stage of sentence production for speakers normally occurs at the end of the second year of life--amazing when one stops to think of it: two years a member of the race but barely beginning on the system that is supposed to distinguish the species! The two-sign stage of sign language sentence production appears normally at the beginning or just before the second year (see e.g. Williams in Stokoe 1972:167-170).

The natural aptitude of chimpanzees and at least one gorilla for gestural behavior of a communicating kind has been extended by the Gardners, Fouts, and others to the point where it would better be termed prelinguistic than nonverbal. Also the prelinguistic gestural behavior of most human infants remains transformed in the speaking adult as gesticulation; that of a very few children becomes centrally linguistic activity when they begin at an early age to ask questions and converse in gSigns instead of words (Williams, loc.cit.).

In a conference on The Organization of Behavior in Face-to-Face Interaction (Kendon et al 1976), participants all favored a new definition of nonverbal behavior that would recognize the relationships being explored here and others; Yngve called for a broader linguistics than at present; and Sarles urged a "human ethology" that could deal with the entirety of human behavior. If these and similar calls were to be heeded, much of what is termed nonverbal could be used in making a science of man less esoteric than linguistics recently has been. The study of sign languages, of interactive behavior, of nervous system and motoric functioning, and of communities and cultures in which interaction in language is nonvocal can contribute to such a science.

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